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EXAMINER	
TANG, KAREN C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,097	PRONK ET AL.	
	Examiner	Art Unit	
	YAN LU CHEN	2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-8,10-12 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-8,10-12 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14, 15 and 17-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 14, the claimed limitation is not described in the written specification and is inconsistent with paragraphs [0029] and [0059] of the written description. Paragraph [0029] and [0059] of the written description states that "a relatively high traffic load on the system, it pays off to merge a relative high number of access requests into the multi-request", whereas the limitation of claim 14 recites the opposite "a number of requests merged to form the multi request is increased when a traffic load of the system is decreased".

For claim 15 and 17-20, the claimed limitation “a number of requests merged to form the multi request is inversely proportional to a traffic load of the system” is not described in the written specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation “the traffic load” on page 10. There is insufficient antecedent basis for this limitation in the claim. Additionally, line 5 recites “the histories". It is unclear whether this is intended to be the same as or different from the "histories of access requests previously merged, multi requests previously sent and or grants previously received”, for examination purpose, it is assumed they are the same. Appropriate correction is required.

Claim 19 recites the limitation “the system” on page 10. There is insufficient antecedent basis for this limitation in the claim. For examination purpose, "the system" of claim 19 is assumed to be same as "the shared medium communication system” of claim 8. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1,3, 4, 6-8, 10-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyles et al., Patent No.: US 5,917,822 (hereinafter Lyles) and further in view of Wu et al., Publication No.: US 2002/0176361 A1 (hereinafter Wu).

Regarding claim 1,

Lyles substantially teaches a shared medium communication system comprising:

a primary station arranged to receive an access request, process the access request and send a grant in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; abstract: "executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared media", column 10, line 1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)");

a secondary station for sending the access request and for receiving the grant (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, "Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those authorizations"); and

a shared medium coupling the primary station with the secondary station (figure 3, element 310, network; column 4, lines 41-44, "Shared Media. Any media such that (1) the bandwidth allocation unit 305 schedules the entirety of the transmissions, and can transmit to any single network access unit 315, or group of network access units 315"), characterized in that the secondary station is arranged to merge several access requests into a multi-request and send the

multi-request to the primary station, and in that the primary station is arranged to receive the multi-request, process the multi-request and send the grants in response to the access requests merged in the multi-request (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are

"learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt merging and sending of access requests based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Claim 3 is rejected on the same basis as claim 1. See the discussions regarding claim 1 above for details of this disclosure.

Regarding claim 4,

Lyles substantially teaches a secondary station for sending an access request to a primary station and for receiving a grant from the primary station in response to the access request (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, "Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those

authorizations"), the access request comprising a request for access to a shared medium, characterized in that the secondary station is arranged to merge several access requests into a multi-request and send the multi-request to the primary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"), Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the

advantage of using collected feedback message history for data transmission adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt merging and sending of access requests based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Claim 6 is rejected on the same basis as claim 4. See the discussions regarding claim 4 above for details of this disclosure.

Regarding claim 7,

Lyles substantially teaches a primary station for receiving an access request from a secondary station, for processing the access request and for sending a grant to the secondary station in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; column 6, lines 52-54, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit"; abstract: "executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared

media", column 10, line 1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)"), the access request comprising a request for access to a shared medium, characterized in that the primary station is arranged to receive a multi-request containing several merged access requests, process the multi-request and send the grants to the secondary station in response to the access requests in the multi-request (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"; column 6, lines 54-56, "converting the arriving requests into virtual scheduling times for granting access to the shared media"). Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt merging and sending of access requests based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Regarding claim 8,

Lyles substantially teaches a method of operating a shared medium communication system, the method comprising:

a primary station receiving an access request, processing the access request and sending a grant in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; column 6, lines 52-54, "requests for transmission bandwidth received by a bandwidth allocation unit from a network

access unit"; abstract: "executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared media", column 10, line 1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)"),

a secondary station sending the access request to and receiving the grant from the primary station, the access request comprising a request for access to a shared medium (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, "Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those authorizations"), characterized in that the method further comprises:

the secondary station merging several access requests into a multi-request and sending the multi-request to the primary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"),

the primary station receiving the multi-request, processing the multi-request and sending the grants in response to the access requests merged in the multi-request (column 6, lines 52-56, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media."), and

Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission

adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt merging and sending of access requests based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Claim 10 is rejected on the same basis as claim 8. See the discussions regarding claim 8 above for details of this disclosure.

Regarding claim 11,

Lyles substantially teaches a method of sending an access request to a primary station and receiving a grant from the primary station in response to the access request, the access request comprising a request for access to a shared medium (column 6, lines 52-56, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media."), characterized in that the method comprises merging several access requests into a multi-request and sending the multi-request to the primary station (column 7,

lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"). Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission

adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt merging and sending of access requests based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Regarding claim 12,

Lyles substantially teaches a method of receiving an access request from a secondary station, processing the access request and sending a grant to the secondary station in response to the access request, the access request comprising a request for access to a shared medium, characterized in that the method comprises receiving a multi-request comprising several merged access requests (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"), processing

the multi-request and sending the grants to the secondary station in response to the access requests merged in the multi-request (column 6, lines 52-56, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media."; column 10, line 1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)"). Lyles teaches the merging and sending of access requests by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Lyles does not explicitly disclose the number of request merged is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and the network characteristics (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission

adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to adapt the number of requests merged based on the information collected on previous data transmission as taught by Wu.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu.

Regarding claim 16, Lyles and Wu teach the shared medium communication system according to claim 1, as described above.

Wu further teaches the traffic load is predicted from the histories (see Wu, paragraph [0029]).

Since using past histories to predict future occurrences/conditions of a system are well know in the art, it would have been obvious to one of ordinary skill in the art, having the teachings of Lyles and Wu before them at the time the invention was made to modify the shared medium communication system of Lyles to predict the traffic load from the histories of the communication media as taught by Sourani.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium by utilizing the history of the communication medium in view of Sourani.

7. Claims 14, 15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyles in view of Wu as applied to claims 1, 4, 7, 8 and 11 above, and further in view of Sourani et al., Patent No.: US 6,549,515 B1 (hereinafter Sourani).

Lyles in view of Wu teach the limitation of claims 1, 4, 7, 8 and 11 above.

Lyles does not explicitly disclose a number of requests merged to form the multi request is inversely proportional to a traffic load of the system.

Wu teaches that data rate is adjusted base on the history of the traffic load of the system (see Wu, paragraphs [0029]-[0032]). Sourani teaches that the data rate is decreased when the load is large and data rate is increase when the load is small (see column 8, lines 20-45 and figure 3), which indicate that the adjustment of the data rate is inversely proportional to the load of the system.

Since the number of requests merged is proportional to the size of the merged request, and the size of the merged requests is proportional to the data rate, it would have been obvious to one of ordinary skill in the art, having the teachings of Lyles, Wu and Sourani before them at the time the invention was made to modify the shared medium communication system of Lyles to have the number of requests merged to form the multi request to be inversely proportional to the traffic load of the system as taught by Sourani.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Sourani.

Response to Arguments

8. Applicant's arguments filed 10/09/2007 have been fully considered but they are not persuasive.

9. In the remarks, applicant argued that:

(1) Lyles in view of Wu does not teach the "adapting the merging of the access request in dependence on histories".

10. In response to point (1), Lyles teaches the merging and sending of access request by the secondary station (see Lyles column 7, lines 7-25). Wu teaches a system where data transmission rate is adapted based on history of previous data rate transmissions and network characteristics (see Wu, paragraph [0029]). Wu further provides the advantage of using the past history of the transmission medium to adapt the data rate so the system can efficiently utilize the available bandwidth. The step of merging of access requests and the step of reducing data rate are both gear toward the goal of reducing the load/usage on the share/transmission medium, therefore, it would have been obvious to one of ordinary skill in the art to use the past history and the activities of the transmission medium as taught by Wu for the adaptation of the merging of access requests as taught by Lyles. One of ordinary skill in the art would have been motivated to make this modification in order to efficiently (neither under utilize nor over loading the share medium) transmitted data in a shared medium in view of Wu. Lyles in view of Wu teach the adapting the merging of the access request in dependence on

histories of access requests previously merged, multi requests previously sent and/or grants previously received.

11. Applicant's arguments with respect to claims 14-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yan Chen whose telephone number is (571) 270-1926. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yan Chen/
Examiner, Art Unit 2146

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2146